

### REMARKS

Claims 1-26 and 29 are currently pending in the subject application and are presently under consideration. Claims 1-21 have been withdrawn in consideration of the restriction requirement. Claims 22-26 and 29 have been amended in order to disclaim the cited art as shown on pages 5-7. Claims 27, 28 and 30 have been cancelled without prejudice.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

#### **I. The Indefiniteness Rejection**

Claims 22-27 stand rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements. In particular, the Examiner contends the definition for the variable R and X in the formula R-Lys-X is essential and omitted. Claim 22 has been amended to define the variables R and X. Accordingly, the claims are now clear and concise such that one of ordinary skill in the art can understand the meets and bounds of the subject invention. Withdrawal of the rejection is respectfully requested.

#### **II. The Written Description Rejection**

Claims 22-30 stand rejected under 35 U.S.C. §112, first paragraph, with regard to the written description requirement. In particular the Examiner contends that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention.

Claims 22-28 are drawn to a method of making a hemocompatibly coated medical product comprising coating the surface of the product with at least one caspase inhibitor and/or at least one compound of formula R-Lys-X. The Examiner contends that the scope of the claims with respect to the terms "medical product," "caspase inhibitor," and the compound of formula R-Lys-X, is extremely broad. The claims have been amended to refer to only coated stents and not all medical products. In addition, the claims no longer relate to caspase inhibitors of the combination of a caspase inhibitor

with a compound of the formula R-Lys-X. Further, as discussed above, the variables R and X of the compound R-Lys-X have been clearly defined in claim 22. Thus the claims contain subject matter clearly described in the specification in such a way as to reasonably convey to one skilled in the art what the applicant is claiming as the subject invention.

Furthermore, the subject matter of the claims with respect to the terms, "stent," and "at least one compound of formula R-Lys-X" is clearly described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the invention which is a medical product that reduces the risk of restenosis and methods of manufacturing said coated medical products. The Examiner contends that no embodiments of the invention were reduced to practice at the time of filing. However, the description requirement for a claimed genus may be satisfied by disclosure of relevant, identifying characteristics, i.e., structural or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus.

The specification does in fact describe the structural, physical and/or chemical properties of a compound containing the formula R-Lys-X that leads to the claimed function of the hemocompatibility and the intended function of restenosis inhibition. The spectrum of compounds with the formula R-Lys-X has been limited to a group of compounds having a high similarity to SYSMEHFRWCKPV. All compounds of the aforementioned group share the same structural feature which is displayed by the group R-Lys-X. This uniform structural feature is responsible for the biological activity of the group of compounds as stated in the specification on page 6, line 18 to page 7 line 14. Therefore all member of this group of compounds possess the same biological activity. This biological activity is reducing restenosis as clearly shown in the example of compound SYSMEHFRWCKPV. Accordingly, one skilled in the art would believe that at the time of filing, the subject inventors had possession of the invention of a coated medical stent that reduces the risk of restenosis and methods of manufacturing said coated stents. Thus withdrawal of the rejection is respectfully requested.

### III. The Enablement Rejection

Claims 22-30 stand rejected under 35 U.S.C 112, first paragraph, with regard to enabling the use of medical products coated with caspase inhibitors other than Ac-YVAD-cmk or compounds with the formula R-Lys-X. As amended, the claims are now only directed to the use of medical stents coated with compounds with the formula R-Lys-X. As discussed above, the spectrum of compounds with the formula R-Lys-X has been limited to a group of compounds having a high similarity to SYSMEHFRWCKPV. All compounds of the aforementioned group share the same structural feature which is displayed by the group R-Lys-X. This uniform structural feature is responsible for the biological activity of the group of compounds as stated in the specification on page 6, line 18 to page 7 line 14. Therefore all member of this group of compounds possess the same biological activity. This biological activity is reducing restenosis as clearly shown in the example of compound SYSMEHFRWCKPV. Thus at the time of the invention, one skilled in the art would have not be forced to undergo undue experimentation to provide a medical stent coated with a compound having the formula R-Lys-X that aids in the reduction of restenosis.

The Examiner states that the embodiments of the specification only disclose that the inventive products are administered by perfusion balloon, but not via a coated medical product. The application describes on page 14 line, 30 to page 15, line 13 that the layer containing said compound of general formula R-Lys-X and/or said anti-inflammatory, anti-proliferic, anti-thrombotic, and/or anti-coagulative agent can be formed directly on the normally not hemocompatible surface of the medical product, or on a first layer applied on the surface of the medical product. On top of the layer containing said Caspase inhibitor and/or said compound of general formula R-Lys-X and/or said anti-inflammatory, anti-proliferic, anti-thrombotic, and/or anti-coagulative agent another layer can be generated. A person skilled in the production of coated stents knows the standardized methods for such coatings like spraying a solution containing the different compounds onto the surface and drying the stent. Another coating method is dipping the stent into the coating solution.

The cited reference Slavin et al. describes that the choice of polymers is complicated as specifically after the elution of the therapeutic agent is completed an

inflammation of the vascular tissue is caused by many polymers. The amended claims are limited to the use of biodegradable polymers only. A person skilled in the art knows that these polymers are used to be degraded over time. Normally this degradation should be completed before all active agents are eluted. Therefore unwanted side effects of the polymers can be avoided.

Thus at the time of the invention, one skilled in the art would have not be forced to undergo undue experimentation to provide a medical stent coated with a compound having the formula R-Lys-X that aids in the reduction of restenosis. Accordingly, the invention as described in claims 22-30 is enabled and withdrawal of the rejection is respectfully requested.

#### **IV. First Anticipation Rejection**

Claims 29 and 30 stand rejected under 35 U.S.C. §102(e) over Bell (US 2004/0219147). Bell relates to methods of reducing mortality in myocardial infarction patients receiving a stent in connection with percutaneous transluminal coronary angioplasty.

Claim 30 has been cancelled rendering the rejection moot. Claims 22 and 24, from which claim 29 depends, recite a method for the preparation of a hemocompatibly coated stent, comprising coating a surface of a stent with a coating composition comprising at least one compound of formula R-Lys-X. Although Bell discloses coating a medical stent with caspase inhibitors, Bell fails to disclose coating a stent with peptides limited to the formula R-Lys-X. Claims 22 and 24 are no longer directed to caspase inhibitors. Because Bell fails to disclose all of the features of claims 22 and 24, Bell cannot anticipate claims 22 and 24 as well as claim 29 which depends therefrom. Thus withdrawal of the rejection is respectfully requested.

#### **V. Second Anticipation Rejection**

Claims 22-25, 28, and 29 stand rejected under 35 U.S.C. §102(b) over Chluba et al ("Peptide Hormone Covalently Bound to Polyelectrolytes and Embedded into Multilayer Architectures Conserving Full Biological Activity," *Biomacromolecules*, **2001**, 2, 800-805).

Chluba is directed to the compound alpha-MSH Bound to Polyelectrolytes and embedded into multilayer architectures. The modification of surfaces with Polyelectrolytes needs charged groups of the polymeric surfaces. The peptide is used to stimulate melanogenesis.

As discussed above claims 22 and 24, from which claim 29 depends, recite a method for the preparation of a hemocompatibly coated stent, comprising coating a surface of a stent with a coating composition comprising at least one compound of formula R-Lys-X. Chluba fails to disclose the aforementioned feature. In particular, although the compound alpha-MSH of Chluba corresponds to compounds of the formula R-Lys-X of the above mentioned application the subject claims are now directed to hemocompatible coated stents with compounds of the general formula R-Lys-X for reducing restenosis. Stents are mostly made of metal. However the compound of Chluba is bound to polyelectrolytes. Further the invention of Chluba is used to stimulate melanogenesis and not to reduce restenosis. Thus Chluba fails to teach or suggest a stent coated with compounds of the formula R-Lys-X that reduces restenosis. Because Chluba fails to disclose all of the features of claims 22 and 24, Chluba cannot anticipate the subject claims. Thus withdrawal of the rejection of claims 22, 24, and those which depend therefrom, is respectfully requested.

#### **VI. First Obviousness Rejection**

Claims 22, 26, and 27 stand rejected under 35 U.S.C. §103(a) over Bell (US 2004/0219147).

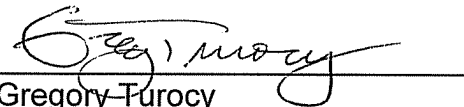
As discussed above, Bell fails to disclose a method for the preparation of a hemocompatibly coated stent, comprising coating a surface of a stent with a coating composition comprising at least one compound of formula R-Lys-X as recited by claim 24. Because Bell merely teaches coating a medical stent with caspase inhibitors, Bell further fails to teach or suggest the aforementioned feature. Accordingly, withdrawal of the rejection of claim 22 and claims 26 and 27 which depend therefrom, is respectfully requested.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [ARTHP118US].

Respectfully submitted,

TUROC & WATSON, LLP

  
\_\_\_\_\_  
Gregory Turocy  
Reg. No. 36,952

127 Public Square  
57<sup>th</sup> Floor, Key Tower  
Cleveland, Ohio 44114  
Telephone (216) 696-8730  
Facsimile (216) 696-8731